

AMEDMENT

In The Claims:

Please amend the claims as follows:

1. (currently amended) A method of forming a periodic structure, comprising:

irradiating a surface of a material with a linearly polarized single laser beam of a femtosecond laser, of which a fluence is above but nearly as low as ablation threshold, ~~such as to restrain an ablation as much as possible~~; and

executing an overlapped scanning ~~on the irradiated region~~ in which the laser beam is scanned on the material surface with a laser scanning speed being set such that the number of pulses of the laser beam irradiated on an identical position of the material surface is within a range of 10 to 300, so as to cause the ablation on the material surface at a section where interference has taken place between a p-polarization component of an incident beam and a p-polarization component of a surface scattered wave of the p-polarization component generated along the material surface, and to thereby ~~cause spontaneous formation of a form~~ form a periodic structure ~~having a~~ on the material surface, wherein the periodic structure has ripples spacing near a wavelength of the incident beam in a direction perpendicular to a polarization direction of the incident beam.

Claim 2. (canceled)

3. (previously presented) The method according to claim 1, wherein the step of irradiating the laser beam includes changing an incident angle of the laser beam to the material surface, to thereby change a ripple spacing of the periodic structure.

4. (currently amended) The method according to claim 1, wherein the step of irradiating the laser beam includes irradiating the laser beam at an incident angle, and the step of executing ~~[[an]]~~the overlapped scanning includes changing a scanning direction of the laser beam so as to change the periodic structure.

5. (previously presented) The method according to claim 1, wherein the step of irradiating the laser beam includes changing a direction of polarization so as to change a direction of the periodic structure.

6. (previously presented) The method according to claim 1, further comprising utilizing a beam expander either with or without a cylindrical lens, thus expanding the laser beam to irradiate a more extensive area.

Claims 7 and 8 (canceled)

9. (currently amended) The method according to claim ~~[[7]]~~1, wherein ~~the step of forming the grating structure includes forming the grating structure so as to overlap in different directions~~the periodic structures in different directions are formed on the material surface in state of overlapping each other.

10. (currently amended) The method according to claim ~~[[7]]~~1, wherein ~~the step of forming the grating structure includes disposing the grating structure in a mixed layout in~~

~~different direction~~the periodic structures in different directions are formed on the material surface in state of being adjacent to or spaced from each other.

11. (currently amended) The method according to claim [[7]]9, wherein the ~~step of forming the grating structure includes irradiating a laser beam near an ablation threshold~~ is split into two laser beams having a plurality of pulses of a different direction of polarization to each other to the surface of the material, such that the pulses do not overlap in time; executing an overlapped scanning on the irradiated region, to thereby cause spontaneous formation of the grating structure so as to overlap in different directions, and wherein the laser beams are irradiated on the material surface at a predetermined time interval such that the laser beams do not overlap each other.

12. (currently amended) The method according to claim [[7]]10, wherein ~~the step of forming the grating structure includes irradiating a laser beam near an ablation threshold to the surface of the material; and the step of executing an overlapped scanning includes changing the direction of polarization of the laser beam is changed during the scanning, to thereby cause spontaneous formation of the grating structure in a mixed layout in different directions.~~

13. (currently amended) The method according to claim [[7]]11, ~~further comprising utilizing wherein the laser beam is condensed by a cylindrical lens to condense the laser beam, thus forming the grating structure in a more extensive area.~~

Claim 14. (canceled)

15. (currently amended) The method according to claim [[7]]1, wherein the material surface formed with the periodic structure has characteristics ~~include~~including dust proofness and inhibition of particle adhesion.

16. (currently amended) The method according to claim [[7]]1, wherein the material surface formed with the periodic structure has characteristics ~~include~~including reduction of friction and friction wear.

17. (currently amended) The method according to claim [[7]]1, wherein the material surface formed with the periodic structure has characteristics ~~include~~including reduction of wettability.